

IN THE CLAIMS

Claim 1 (original). A blend of at least two components K1 and K2, each component being based on at least one block copolymer C1 or C2 respectively,

- the at least one block copolymer C1 of component K1 comprising at least the unit P(A1)-P(B1)-P(A1), comprising at least one polymer block P(B1) and at least two polymer blocks P(A1), where
 - P(A1) independently at each occurrence represents homopolymer or copolymer blocks of monomers A1, the polymer blocks P(A1) each having a softening temperature in the range from +20°C to +175°C,
 - P(B1) represents a homopolymer or copolymer block of monomers B1, the polymer block P(B1) having a softening temperature in the range from -130°C to +10°C,
 - the polymer blocks P(A1) and P(B1) are not homogeneously miscible with one another,
- the at least one block copolymer C2 of component K2 comprising at least the unit P(B2)-P(A2)-P(B2), comprising at least two polymer blocks P(B2) and at least one polymer block P(A2), where
 - P(A2) represents a homopolymer or copolymer block of monomers A2, the polymer block P(A2) having a softening temperature in the range from +20°C to +175°C,
 - P(B2) independently at each occurrence represents homopolymer or copolymer blocks of monomers B2, the polymer blocks P(B2) each having a softening temperature in the range from -130°C to +10°C,
 - the polymer blocks P(A2) and P(B2) are not homogeneously miscible with one another,
- and the blend forming an at least two-phase system.

Claim 2 (currently amended). The blend of claim 1, ~~characterized in that~~ wherein component K1 is present in an amount m_{K1} and component K2 is present in an amount m_{K2} , and the ~~ratio V of the~~ amount m_{K2} of component K2 used in the blend to

the amount m_{K1} of component K1 used in the blend is up to 250 parts by weight of K2 per 100 parts by weight of K1, ~~i.e.,~~ to produce a ratio $V = m_{K2}/m_{K1} \leq 2.5$.

Claim 3 (currently amended). The blend of ~~at least one of the preceding claims,~~
~~characterized in that~~ claim 1, wherein the blocks P(A1) are compatible with the
blocks P(A2) and/or their respective corresponding polymers P'(A1) with P'(A2)
and/or the blocks P(B1) are compatible with the blocks P(B2) and/or their respective
corresponding polymers P'(B1) with P'(B2).

Claim 4 (currently amended). The ~~pressure-sensitive adhesive of at least one of~~
~~the preceding claims, characterized in that~~ blend of claim 1, wherein the
polymer blocks P(A1) and the polymer blocks P(A2) and/or the polymer blocks P(B1)
and the polymer blocks P(B2) possess an identical homopolymer and/or copolymer
composition.

Claim 5 (currently amended). The blend ~~of at least one of the preceding claims,~~
~~characterized in that~~ of claim 1, wherein the average chain length LB2 of the
polymer blocks P(B2) of the block copolymer C2 does not exceed the average chain
length LB1 of the polymer block P(B1) of the block copolymer C1, ~~advantageously~~
~~LB2 being at least 10% smaller than LB1, very advantageously LB2 being at~~
~~least 20% smaller than LB1.~~

Claim 6 (currently amended). The blend of ~~at least one of the preceding claims,~~
~~characterized in that~~ claim 1, wherein, with the symbol i representing 1 or 2,
the polymer blocks P(Ai) are present as a disperse phase (“domains”) in a
continuous matrix of the polymer blocks P(Bi), ~~preferably optionally~~ as spherical or
distortedly spherical domains, this condition being obtained ~~in particular~~ by
adjustment of the ratio V_{Li} of the average chain lengths LAi of the polymer blocks
P(Ai) to the average chain lengths LBi of the polymer blocks P(Bi) ~~of the block~~
~~copolymers Ci, very preferably by adjustment of the ratio V_{Li} of the block~~
~~copolymer C1.~~

Claim 7 (currently amended). The blend of ~~at least one of the preceding claims,~~
~~characterized in that claim 1, wherein~~ as block copolymer C2 star polymers of the ~~type~~
formula $[P(A2)-P(B2)]_nX$ are admixed,

- where $n = 3$ to 12 and X is a polyfunctional branching unit, ~~i.e., a chemical structural element via~~ by which the polymer arms $[P(A2)-P(B2)]$ are linked to one another,
- where the polymer blocks $P(A2)$ independently at each occurrence represent homopolymer or copolymer blocks of the monomers $A2$, the polymer blocks $P(A2)$ each having a softening temperature in the range from $+20^{\circ}\text{C}$ to $+175^{\circ}\text{C}$,
- and where the polymer blocks $P(B2)$ independently at each occurrence represent homopolymer or copolymer blocks of the monomers $B2$, the polymer blocks $P(B2)$ each having a softening temperature in the range from -130°C to $+10^{\circ}\text{C}$.

Claim 8 (currently amended). The blend of claim 7, ~~characterized in that~~ wherein
 n different polymer arms are present and at least two of the n polymer arms
 $[P(A2)-P(B2)]$ of the star polymers differ in their chain length and/or their chemical
 structure ~~in that in particular n different polymer arms are present.~~

Claim 9 (currently amended). The ~~pressure-sensitive adhesive of at least one of~~
~~the preceding claims, characterized in that~~ blend of claim 1, wherein at least
 one of the block copolymers $C1$ or $C2$ has a symmetrical structure such that there
 are polymer blocks $P(Ai)$, where i represents 1 or 2 identical in chain length and/or
 in chemical structure and/or there are polymer blocks $P(Bi)$ where i represents 1 or
2 identical in chain length and/or in chemical structure.

Claim 10 (currently amended). The blend of ~~at least one of the preceding claims,~~
~~characterized in that claim 1, wherein~~ the block copolymer C1 ~~exhibits at least~~
~~one of the following criteria has:~~

- a ~~molar mass~~ number average molecular weight M_n of between ~~10 000~~
10,000 and ~~600 000~~ 600,000 g/mol, ~~preferably between 30 000 and~~
~~400 000 g/mol, with particular preference between 50 000 and~~
~~300 000 g/mol,~~
- a polydispersity $D = M_w/M_n$ of not more than 3,
- a polymer block P(A1) fraction of between 5 and 49% by weight, ~~preferably~~
~~between 7.5 and 35% by weight, in particular between 10 and 30% by~~
~~weight,~~ based on the composition of the block copolymer C1.

Claim 11 (currently amended). The blend of ~~at least one of the preceding claims,~~
~~characterized in that additionally claim 1, further comprising~~

- at least one diblock copolymer C3 of the general formula P(A3)-P(B3) ~~is added,~~
 - wherein the polymer blocks P(A3) independently of one another represent homopolymer or copolymer blocks of the monomers A3, the polymer blocks ~~P(A)~~
P(A3) each having a softening temperature in the range from +20°C to +175°C,
 - and wherein the polymer blocks P(B3) independently of one another represent homopolymer or copolymer blocks of the monomers B3, the polymer blocks P(B3) each having a softening temperature in the range from -130°C to +10°C,
- and/or further comprising at least one polymer P'(A4) and/or P'(B4),
 - wherein the polymers P'(A4) represent homopolymers and/or copolymers of the monomers A4, the polymers P'(A4) each having a softening temperature in the range from +20°C to +175°C,
 - wherein the polymers P'(B4) represent homopolymers and/or copolymers of the monomers B4, the polymers P'(B4) each having a softening temperature in the range from -130°C to +10°C,

- and wherein **preferably optionally** the polymers P'(A4) are miscible with the polymer blocks P(A1), P(A2) and/or P(A3) and/or the polymers P'(A4) are miscible with the polymer blocks P(B1), P(B2) and/or P(B3).

Claim 12 (currently amended). The **blend** ~~pressure-sensitive adhesive of at least one of the preceding claims, characterized in that~~ of claim 11, wherein the diblock copolymer ~~exhibits one or more of the following criteria~~ has:

- a molar mass M_n of between 5000 and 600 000 g/mol, ~~preferably between 15 000 and 400 000 g/mol, with particular preference between 30 000 and 300 000 g/mol,~~
- a polydispersity $D = M_w/M_n$ of not more than 3,
- a polymer block P(A3) fraction of between 3 and 50% by weight, ~~preferably between 5 and 35% by weight,~~ based on the diblock copolymer composition.

Claim 13 (currently amended). The blend of ~~at least one of the preceding claims, characterized in that~~ claim 1, wherein, with the symbol i representing 1 or 2, the monomers Bi are ~~chosen from the following groups:~~ selected from the group consisting of

(1) acrylic and/or methacrylic acid derivatives of the ~~general~~ structure (VI)



where $\text{R}^1 = \text{H}$ or CH_3 and $\text{R}^2 = \text{H}$ or linear, branched or cyclic, saturated or unsaturated carbon chains having from 1 to 30, ~~in particular from 4 to 18,~~ carbon atoms,

~~(2) acrylic and/or methacrylic acid derivatives of the general structure (VI)~~



where $R^1 = H$ or CH_3 and $R^2 = H$ or linear, branched or cyclic, saturated or unsaturated carbon chains having from 1 to 30, in particular from 4 to 18, carbon atoms,

~~(3)~~ (2) vinyl compounds which preferably contain functional groups.

Claim 14 (currently amended). The blend of claim ~~15, characterized in that~~ 13, wherein the polymer blocks P(Bi) represent a copolymer of from 75 to 100% by weight of monomers from group (1) and up to 25% by weight of monomers from group (2), the weight fractions adding up to 100.

Claim 15 (currently amended). The blend of ~~at least one of the preceding claims,~~ characterized by claim 1, further comprising

- an admixture of tackifier resins, ~~especially those compatible with the polymer blocks P(Bi), preferably~~ at a weight fraction of up to 40% by weight, ~~very preferably up to 30% by weight,~~ based on the ~~unadditived~~ weight of the blend without said resins,
- and/or an admixture of plasticizers, fillers, nucleators, expandants, compounding agents and/or aging inhibitors.

Claim 16 (currently amended). The ~~pressure-sensitive adhesive of at least one of the preceding claims, characterized in that the pressure-sensitive adhesive blend of claim 1, wherein said blend~~ is processed further from the melt, ~~in that in particular it and~~ is applied to a backing.

Claim 17 (currently amended). ~~The use of a blend of at least one of the preceding claims as the basis for a pressure-sensitive adhesive, in particular for a pressure-sensitive adhesive for a~~ A pressure-sensitive adhesive tape having a pressure sensitive adhesive comprising the blend of claim 1, the pressure-sensitive adhesive being present as a single-sided or double-sided film on a backing.

Claim 18 (new). The blend of claim 5, wherein LB2 is at least 10% smaller than LB1.

Claim 19 (new). The blend of claim 18, wherein LB2 is at least 20% smaller than LB1.